

CLAIMS

[1] An ultrasonic diagnostic apparatus comprising: a plurality of transducers for transmitting and receiving an ultrasonic wave; transmission pulse generators for generating pulses that allow the transducers to transmit
5 the ultrasonic wave; a transmission power source for supplying power to the transmission pulse generators; and an output side capacitor for stabilizing a voltage of the transmission power source,

the transmission power source including: a plurality of mode-specific power sources for outputting a voltage corresponding to each of a plurality of
10 signal processing modes; a power source side capacitor connected to an output side of each of the mode-specific power sources for stabilizing the voltage; and a mode changeover switch provided between the output side of the mode-specific power sources and the output side capacitor for switching between the mode-specific power sources that supply power to the
15 transmission pulse generators,

wherein the transmission power source further includes:

a power supplying power source connected to an input side of the mode-specific power sources for supplying power; and

a power regeneration capacitor with a larger capacity than that of the
20 output side capacitor, one electrode terminal of which is connected to a connection point between the power supplying power source and the input side of the mode-specific power sources and the mode changeover switch, and the other electrode terminal of which is connected to ground, and

the mode changeover switch is capable of connecting the power
25 regeneration capacitor, instead of the output side of each of the mode-specific power sources, to the output side capacitor.

[2] The ultrasonic diagnostic apparatus according to claim 1, comprising a plurality of power regeneration capacitors,

wherein the power regeneration switch is provided that is constituted to achieve a state in which the plurality of power regeneration capacitors are connected in cascade with respect to each of the mode-specific power sources and a state in which the plurality of power regeneration capacitors are
5 connected in parallel with respect to the mode changeover switch.

[3] The ultrasonic diagnostic apparatus according to claim 2, wherein when the mode changeover switch connects the output side capacitor to the output side of each of the mode-specific power sources, the power regeneration switch is controlled to connect the plurality of power
10 regeneration capacitors in cascade with respect to each of the mode-specific power sources and the power source side capacitor.

[4] The ultrasonic diagnostic apparatus according to claim 2 or 3, wherein when the mode changeover switch connects the output side capacitor to the plurality of power regeneration capacitors, the power regeneration
15 switch is controlled to connect the plurality of power regeneration capacitors in cascade with respect to the mode changeover switch.

[5] The ultrasonic diagnostic apparatus according to any one of claims 1 to 4, wherein a photo MOS relay is used as the mode changeover switch.

[6] The ultrasonic diagnostic apparatus according to any one of claims 1
20 to 4, wherein a MEMS (Micro Electro Mechanical Systems) relay is used as the mode changeover switch.

[7] The ultrasonic diagnostic apparatus according to any one of claims 1 to 6, wherein a DC-DC converter is used as the transmission power source.